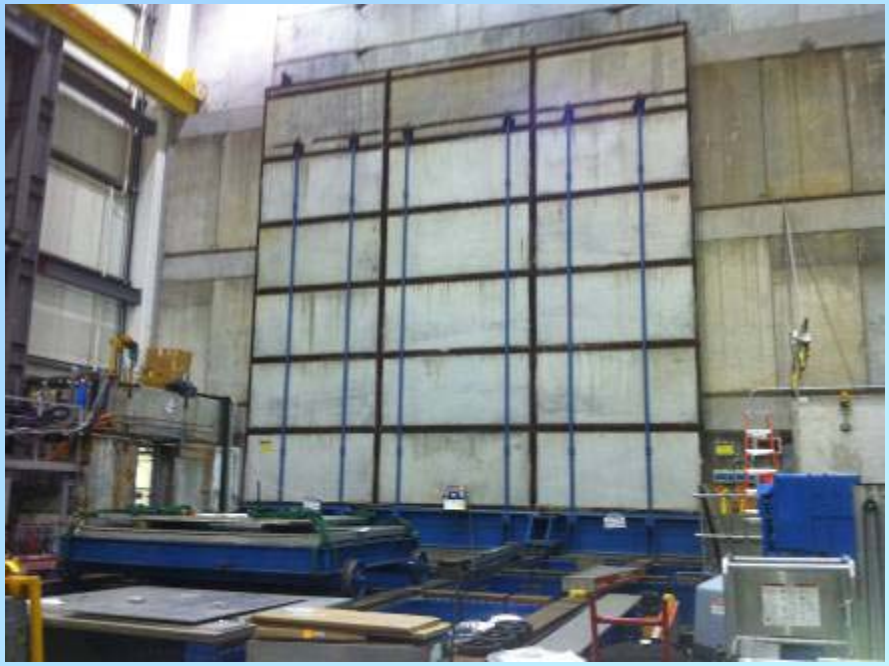
PHENIX

TECHNICAL SUPPORT 2011

PHENIX WEEKLY PLANNING



6/2/2011

Don Lynch

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TECHNICAL SUPPORT 2011

This Week:

Memorial Day holiday – short work week

Maintenance Access Day yesterday:

- 20 More VTX grounding fixes, 1 strippixel ladder LV issue fixed
- VTX flowmweter replaced
- RPC shielding assessment, remote LV control installed
- Flammable gas monitor in EC recalibrated
- ZDC fuse replaced
- PbGl FEM fixed, LV board replaced

Next scheduled maintenance 6/15

IR 1 ton Crane tests

AH 40 ton Crane repairs

Continuing mechanical, electrical and gas system support for Run 11

Continue planning for shutdown 2011

Future upgrades support

Next Week

No Scheduled Maintenance Access, next scheduled access Wednesday June 15

Prepare for ESRC reviews

Summer students begin:

- Morgan Poulos-Keating: to be working with Rob on RPC gas recirculation
- Alan Sweet: to be working with Don on PHENIX CM upgrade logistics

Work Permit for MuTr Station 2/3 re-cap clamps

Schedule MuTr lifting fixture re-certification test

Order parts for new racks (FVTX & RPC1)

Continuing mechanical, electrical and gas system support for Run 11

Continue planning for shutdown 2011

Future upgrades support

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Planning For the 2011 Shutdown

- Prep for shutdown — 2/1-6/30/2011
  - Define tasks and goals
  - Analysis and design of fixtures, tools and procedures
  - Fabricate/procure tools and fixtures
  - Tests, mockups, prototypes
  - Receive, fabricate, modify, finish installables (bigwheels, tubing, etc.)
  - MuTr, RPC1 and VTX/FVTX installation review (combined) — ~6/15/2011
  - Assembly and QA tests
- AH Crane temporary reconfiguration (crane out of service during reconfig) — 4/15-6/3/2011
- Run 11 Ends — 6/29/2010
- Shutdown Standard Tasks — 7/1-7/21/2010
  - Open wall, disassemble wall, Remove MuID Collars,
  - Move EC to AH, etc.
- PC1 repairs – Anders O. ?? — 7/1-7/10/2010
- IR Crane repairs and upgrade — 7/21-7/28
- Disassemble VTX services — 7/11-7/22
- Remove VTX and transport to Chemistry Lab — 7/25/2011
- BBC North maintenance — 7/22-7/29/2011
- MuTr North Station 1 work — 7/25-9/30/2011
  - Install access (scaffold & CM west side hanging platform)
  - Remove 1 section of bridge (1 week)
  - Disconnect Cables, hoses etc, ID/label all (1 week)
  - Remove FEE plates and chambers (1 week)
  - Station 2 Maintenance/upgrade through access opened by station 1 removal (3 weeks concurrent with next task)
  - Clean/install new parts and upgrades (MuTr (3 weeks, concurrent At RPC Factory)
  - Re-install chambers and FEE plates (1 week)
  - Re-cable, re-hose and test (3 weeks

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Planning For the 2011 Shutdown (cont'd)

- MuTr North& South Station 2 & 3 Re-cap clamps — 7/25-10/31/2011
- (No internal work platforms to upper octants)
- VTX maintenance/upgrade and integration of FVTX onto VTX support structure — 7/25-9/25/2011
  - Build 2 FVTX racks
  - Disassemble/repair/upgrade/test/reassemble VTX (3 weeks)
  - Resurvey as necessary (1 week)
  - Install FVTX (3 weeks,)
  - VTX/FTX survey and QA tests (2 weeks)
- RPC1 upgrades — 7/25-10/28/2011
  - Build 1 new rack, upgrade existing RPC1 prototype rack
  - Pre-survey RPC1's at factory (2 weeks, 1 each for n & s)
  - Install north RPC1 (including north rack) (3 weeks)
  - Install south RPC1 (including south rack) (3 weeks)
- Upgrade AH crane — 8/15-9/15/2011
- DC/PC1 East troubleshooting (DC moved forward on rail for access) — 10/15-11/15/2011
- Install VTX&FVTX (including installation of 2 racks on bridge) (2 weeks) — 9/26-11/7/2011
- Undefined detector subsystem maintenance and repairs — 7/25-11/7/2011
- Prep for EC roll in — 11/3-11/7/2011
- Roll in EC — 11/10/2011
- Prep IR for run — 11/10-11/17/2010
- VTX, FVTX and RPC1 Services and commissioning (including 4 new racks) — 9/16-11/30/201
- Pink/Blue/White sheets — 11/17-11/30/201
- Run 12 cooldown — 12/1/2011

Electronics Group 2011 Shutdown Tasks

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- CMT4 and CMT5 FVTX rack design and assembly for installation on the bridge. ***Design in progress.***

- FVTX Bias cable assemblies.
  48 eight pair #22AWG. 1680 ft total.
  384 RG-174 cables terminated with CPC and MMCX R/A conns. 1500 ft total.
  Will be looking for bids to make these cables.

- Purchase and install FVTX LV cables.
  Wedges: 96 eight pair #22AWG terminated in DF11 conns. 3400 ft total.
  ROCs: 24 twelve pair #16AWG terminated in TYCO 2-106527-4 conns. 900ft total.

-All FVTX fiberoptics specify, purchase and install.
  MTP trunk order entered.Need to specify/order 36 fiber trunk, patch bays and patch cables.

- FVTX LV output mapper boards. ***Eric Mannel is designing and we will assemble.***

- PbSc teminator board production. ***Waiting on re-bid.***

-West carriage ADAM system performance upgrade.
  Purchased a couple of Ethernet ADAMs for testing. Need to purchase a MODBUS server.

- Complete the GL1 6X1 Multiplexer assemblies and test. ***Progressing toward layout stage.***

- LeCroy HV control retrofit testing. ***Waiting for documentation from Debrecen Institute.***

- Design/Install FVTX Interlock system.
  Paul with some input from me and John. Also we may try to repair the bad TC connections.

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Tools/Fixtures Needed for Shutdown 2011

- FVTX/VTX modified assembly fixture – in progress
- FVTX Inspection Tool(s) – not yet specified
- Modified FVTX/VTX installation/transport fixture(s) – in progress
- Station 1 north/south work platforms – in progress
- RPC1 assembly fixture(s) – RPC1 design under review
- RPC1 transport/installation fixture(s) – RPC1 design under review
- MuTr vacuum lifter dummy load (for load test and mock install) – in progress
- MuTr stations 2/3 north access work platforms – In design queue
- MuTr stations 2/3 north assembly/positioning/holding fixture – MuTr group to supply

Parts Needed for Shutdown 2011

- Improved/upgraded VTX parts – not yet specified
- VTX assembly(s) – not yet specified
- FVTX support structure – in progress
- FVTX big wheels – parts fabricated by FVTX group; Parts received; to brazer next week
- Big wheel mounts – by FVTX group – Redesign in progress
- VTX arc cable trays and mounts – Design done, fabrication in progress
- RPC1 components/assemblies – by RPC group in progress
- RPC1 mounting/installation components – design in progress to CS next week
- BBC N& S wire management modifications – in progress
- MuTr station1/2/3 Repair/upgrade components – parts to be supplied by MuTr group.

Parts Needed for Shutdown 2011

- **Parts for Other Shutdown Work**
  - Misc. Subsystem Part(s) – not yet specified
  - Gas Mixing House Maintenance and upgrade parts – not yet specified
  - PHENIX Infrastructure Maintenance and improvement parts – not yet specified
  - Gas Pad maintence/repair/upgrade parts – not yet specified
  - PC1/DC repairs and improvements parts – not yet specified
  - IR Bridge electrical service upgrade parts – not yet specified
  - FoCal Support parts – not yet specified
  - RPC Factory Support parts – not yet specified
  - Rack room upgrades parts – not yet specified
  - CM Crane parts – project is on hold indefinitely
  - CM Alignment Stop parts – in design queue
  - Gas system maintenance/repair/upgrade parts – not yet specified
  - Future upgrade support parts – not yet specified

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Procedures for Shutdown 2011

- Existing PHENIX General Purpose Recurring Task procedures
- VTX Removal
- FVTX/VTX installation
- VTX Survey
- FVTX Survey
- FVTX Cooling System
- RPC1 Installation/QA testing/Survey
- MuTr Maintenance & Upgrade (stations 1 2 & 3)
- MuTrigger Maintenance and Upgrade

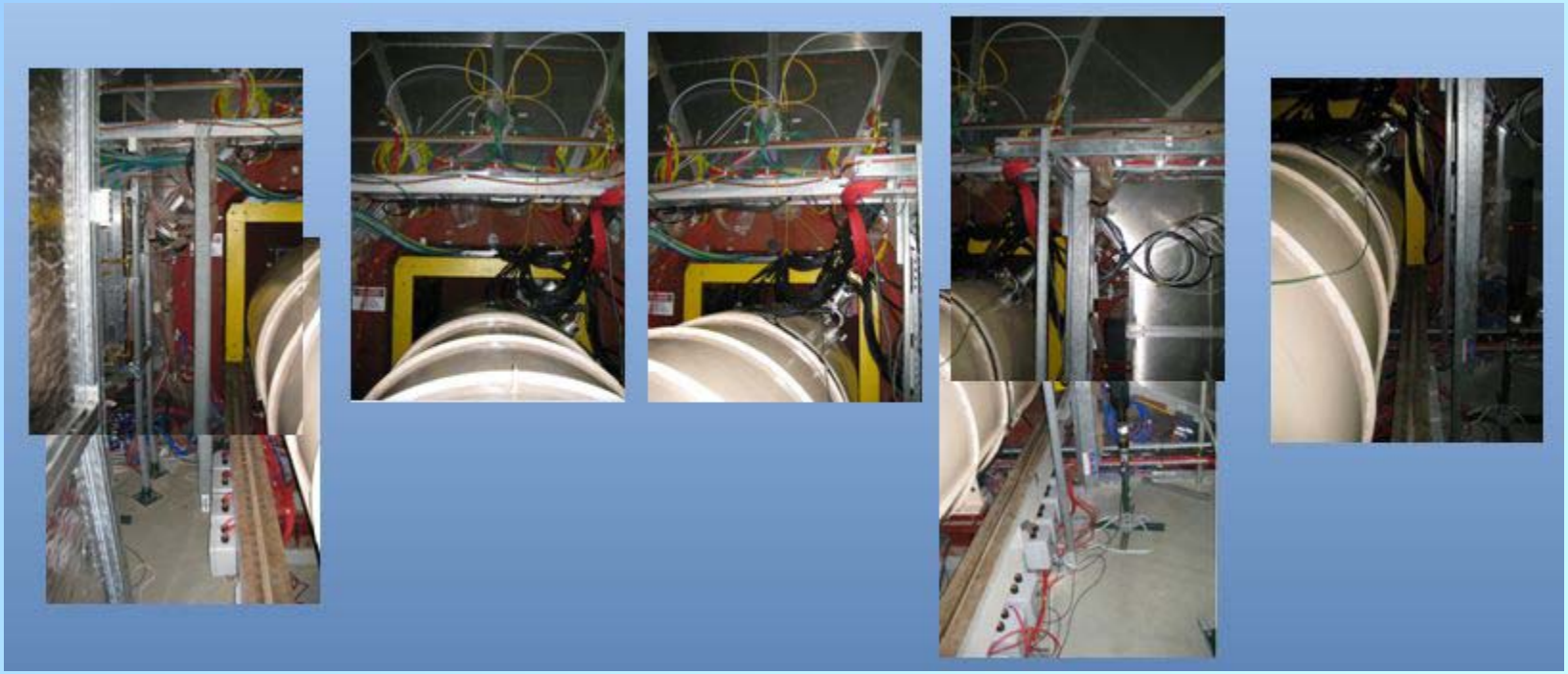
Procedures will be part of 1 WP for VTX and FVTX

Procedure will be part of WP for RPC1

Work Permits for Shutdown 2011

- Start of Shutdown
- VTX Removal/FVTX/VTX Installation
- MuTr Maintenance and Upgrade
- RPC1 Installation
- MuTrigger Maintenance and Upgrade
- PC1
- End of Shutdown

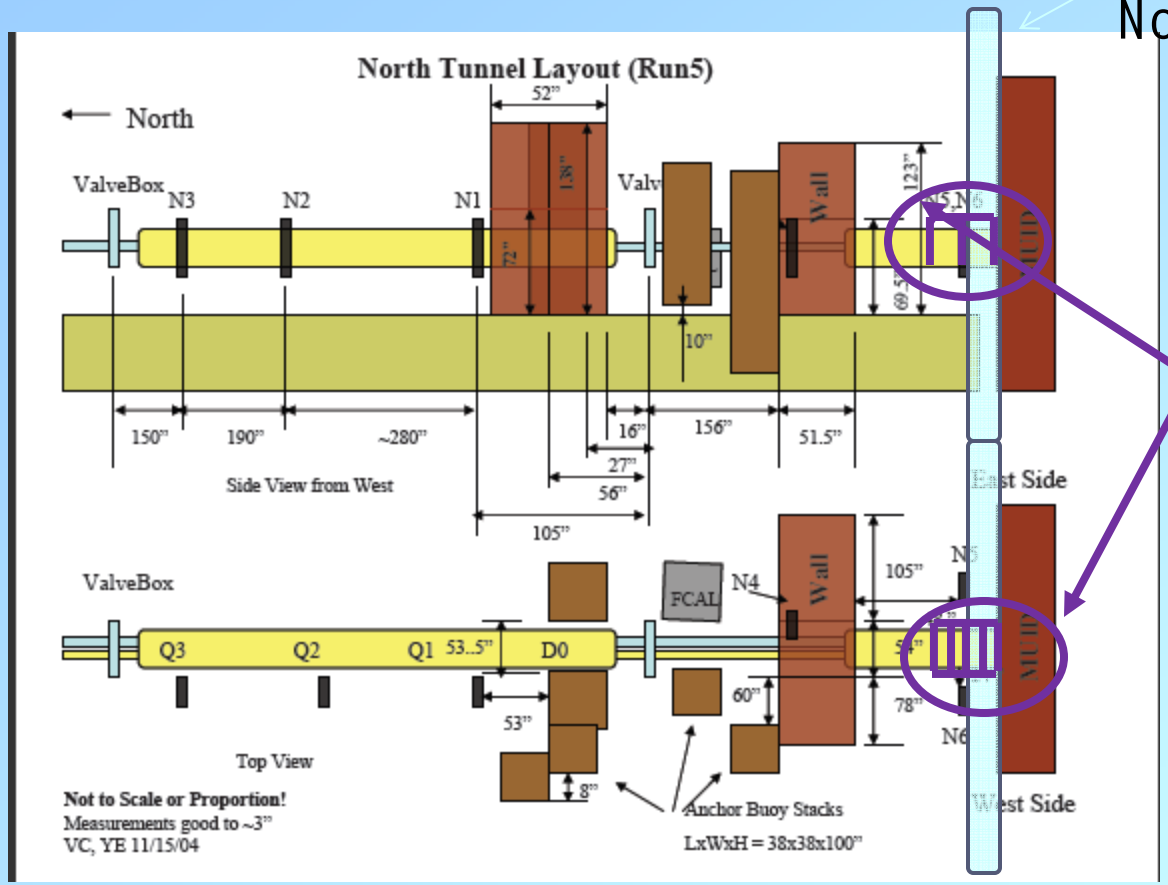
RPC Lead Blanket Shielding Test



RPC North Current configuration

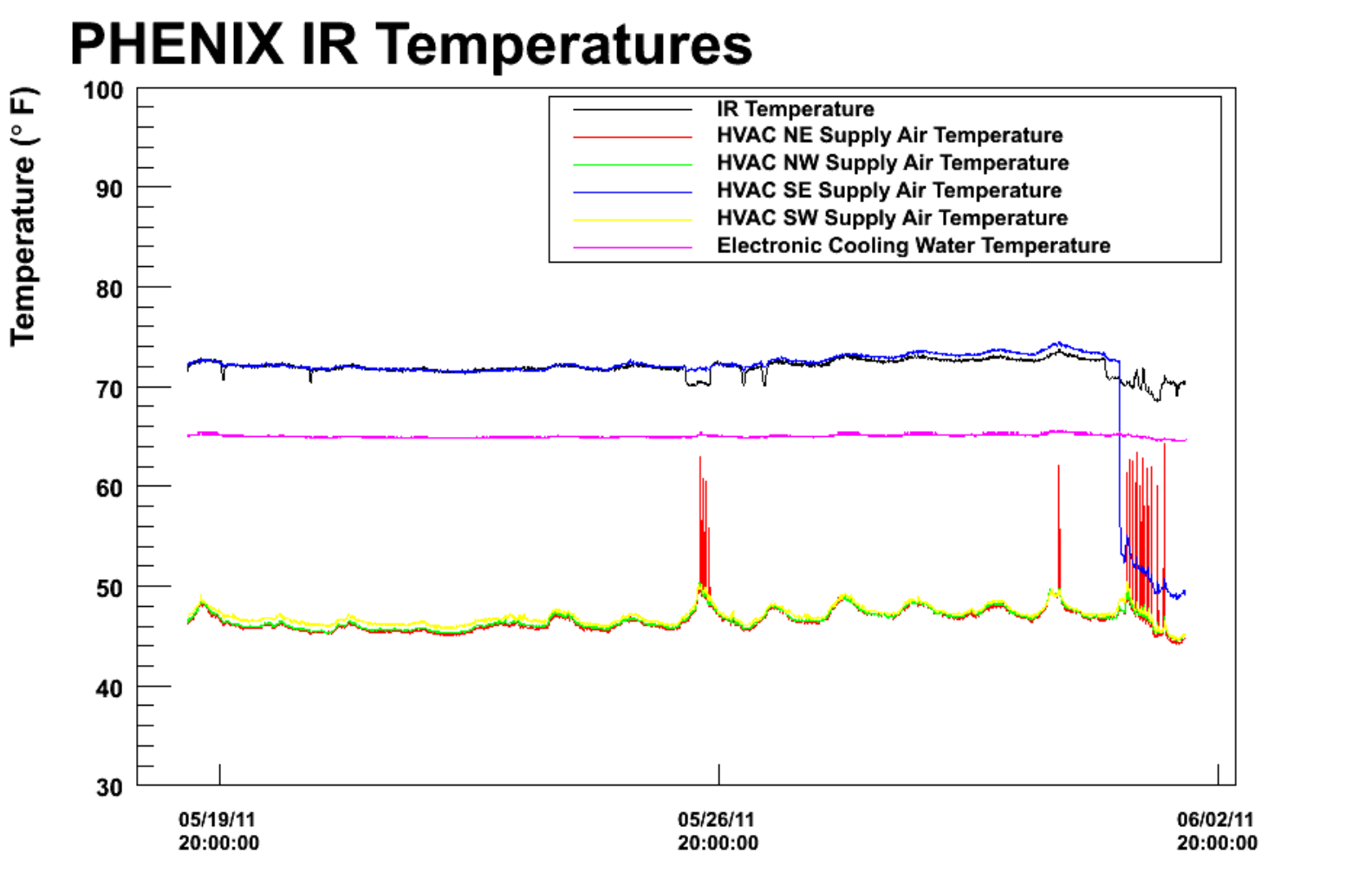
RPC Lead Blanket Shielding Test

RPC3
North

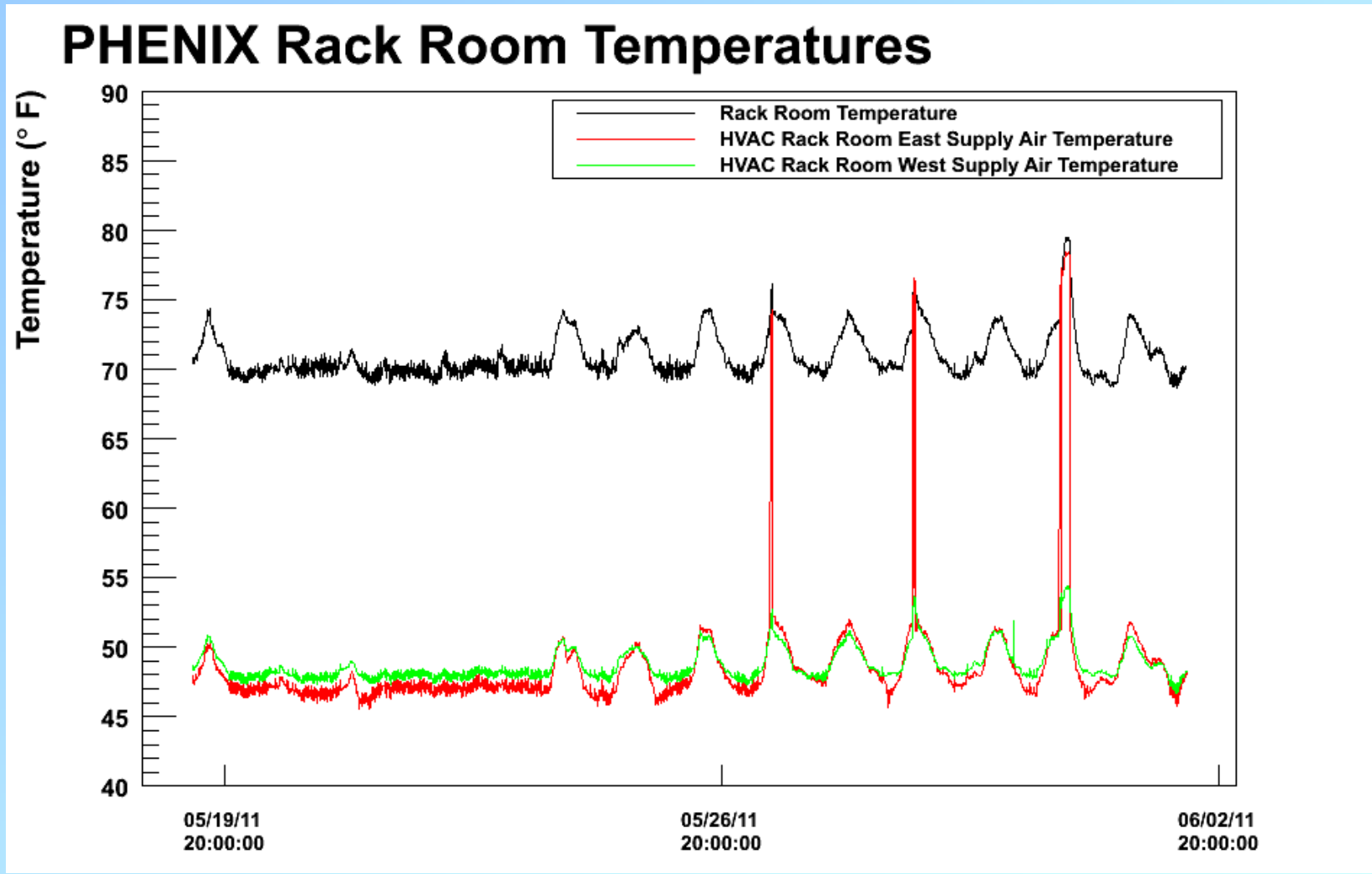


Unistrut Frame mounted on rails, attached to rails at one end to square shield at the other end (pre-existing tapped holes). Approx. 8-" long. Led blankets laid on top.

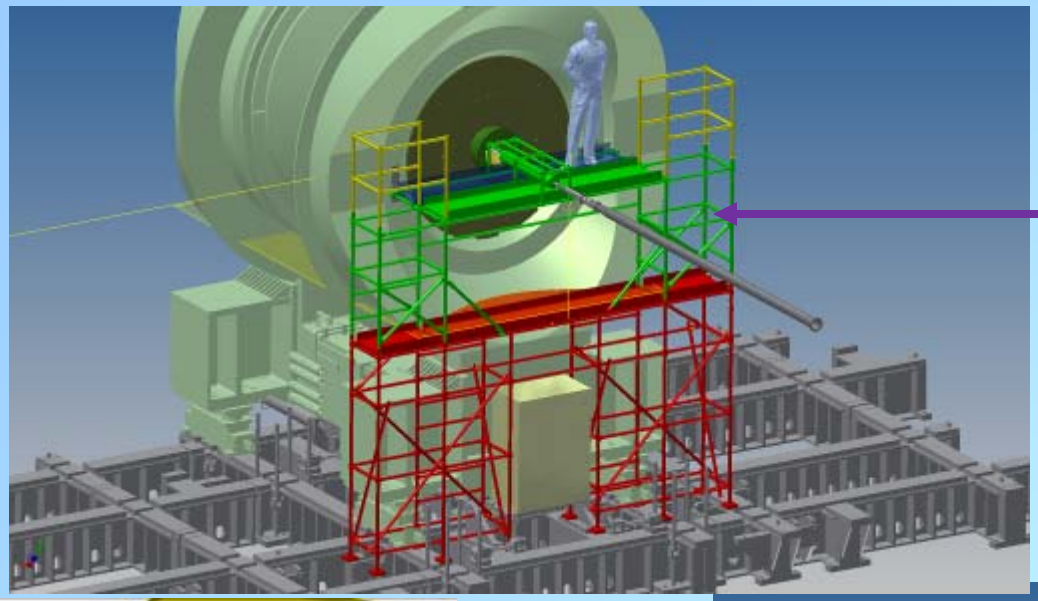
HVAC ISSUES: IR



HVAC ISSUES: Rack Room



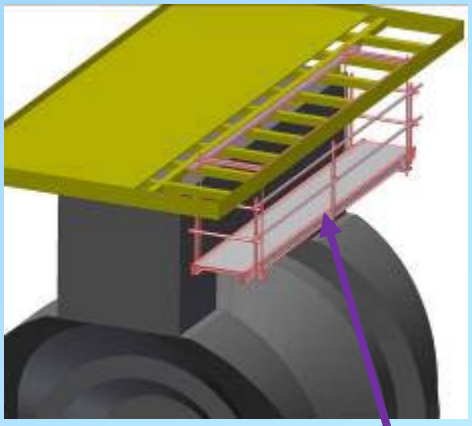
MuTr & RPC1 Work platform



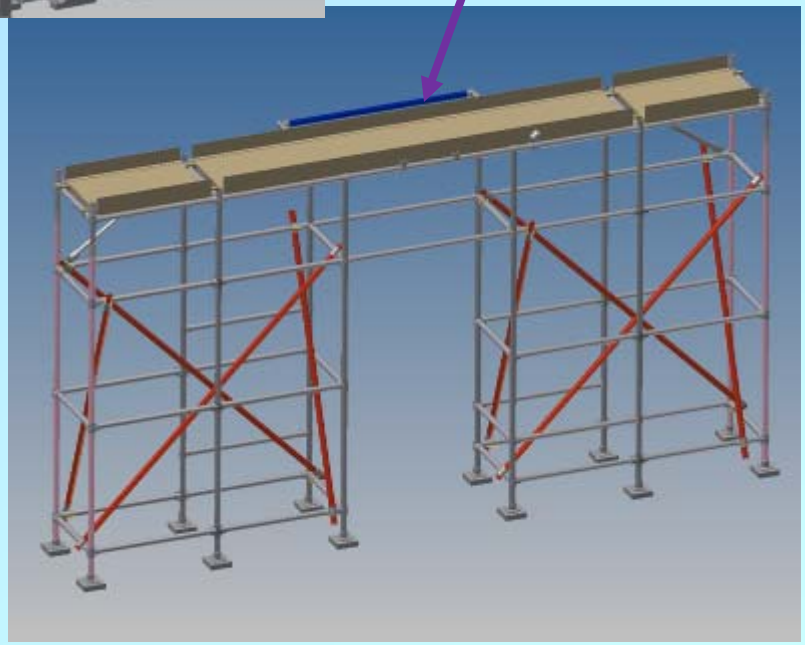
Station 1 Work Platform

Upper level

Lower level (safety rails not shown)



CM West Suspended Platform



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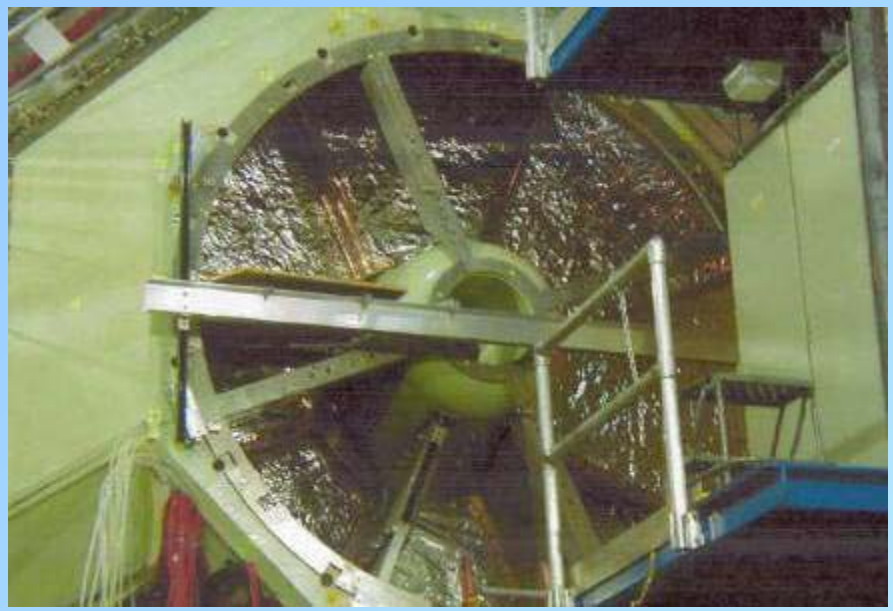
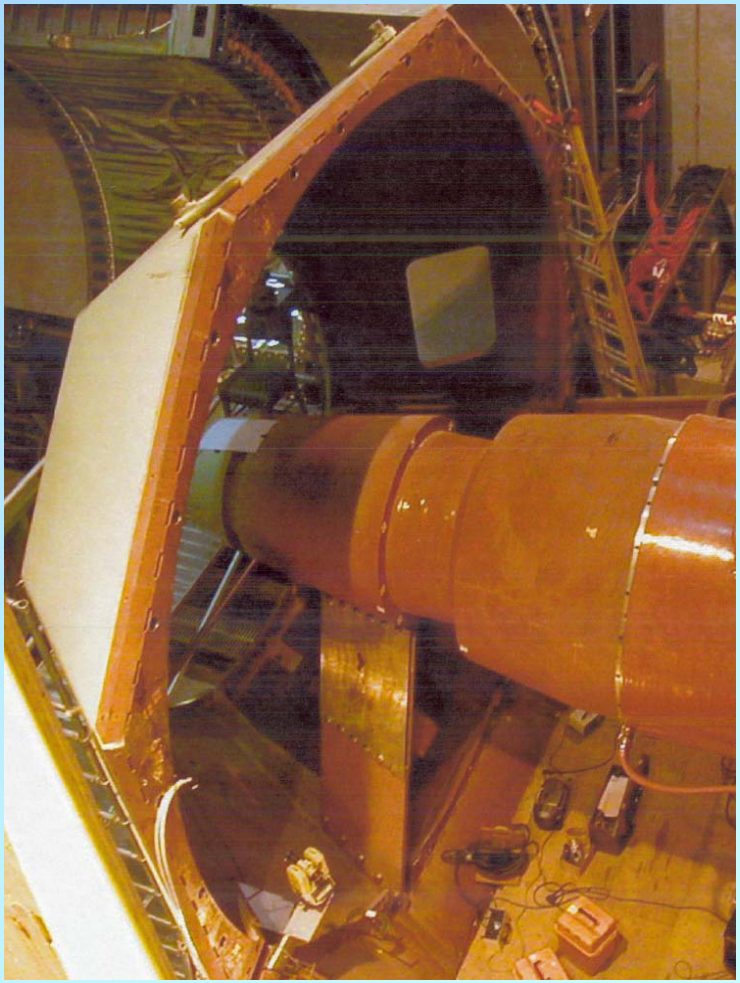
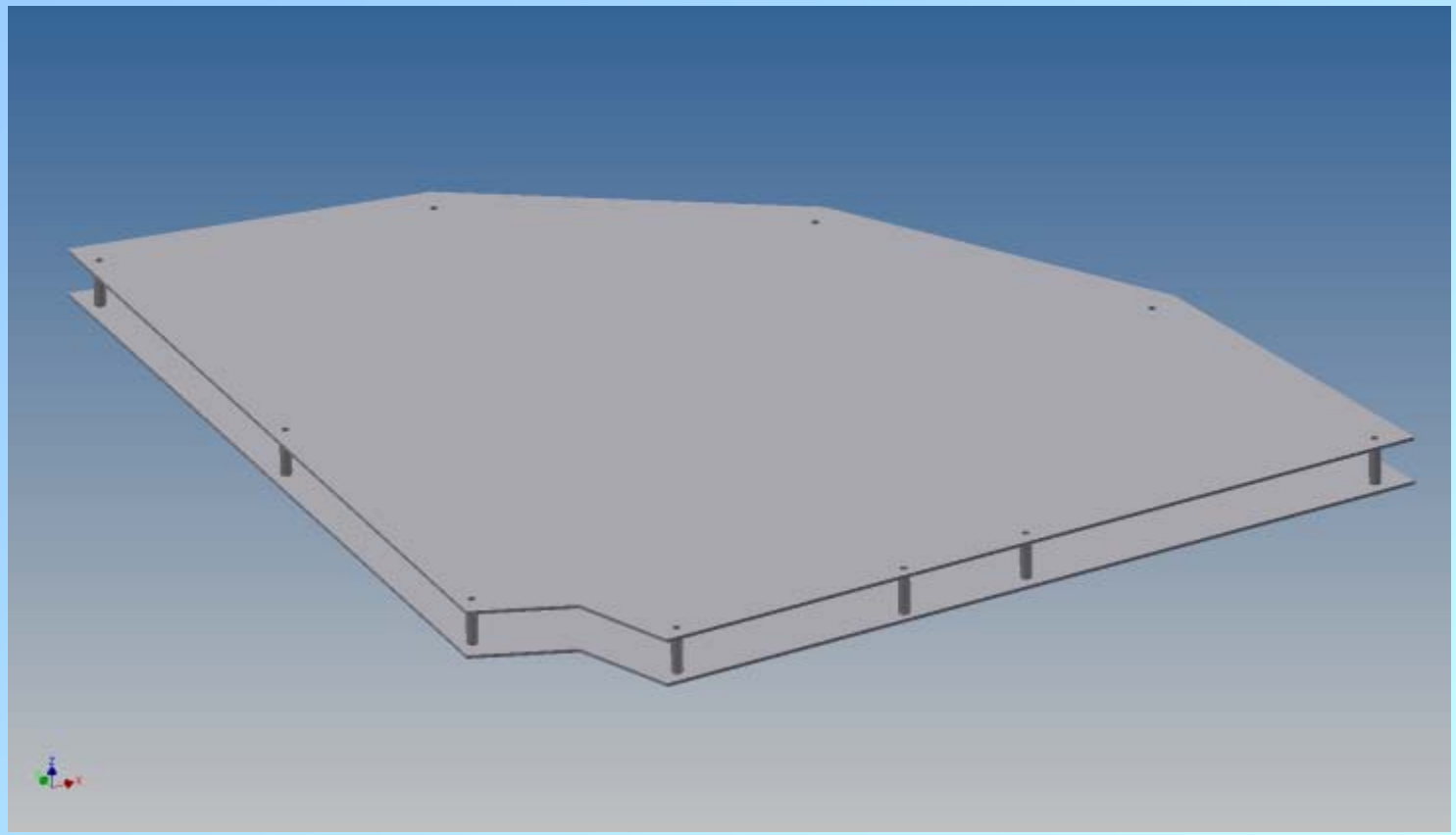




Station 2 access (MMS shown MMN is similar)

MuTr station 1 lifting fixture
Re-certification analyses
submitted to CAD



Dummy MuTr Station 1 Octant. Will be used to re-qualify vacuum lifting fixture and to practice using vacuum lifting fixture prior to removing station 1 north octants. Fabrication in progress at CAD.

AH and IR Crane Corrective Actions

IR Crane 1 ton replacement parts received. Paul and Mike R. planning for upgrade work, test setup complete

AH Crane (both hooks) out of commission until repaired. CAD engineering evaluating options:

The Plan:

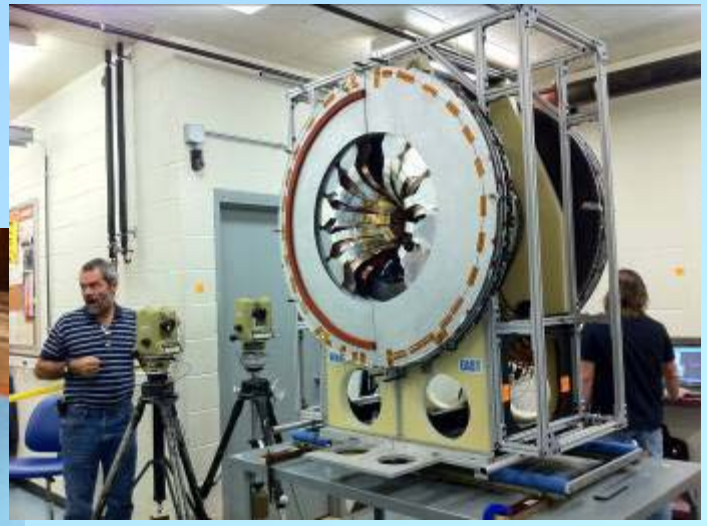
A. Remove speed reduction and use as originally equipped – By May 31 THEN…

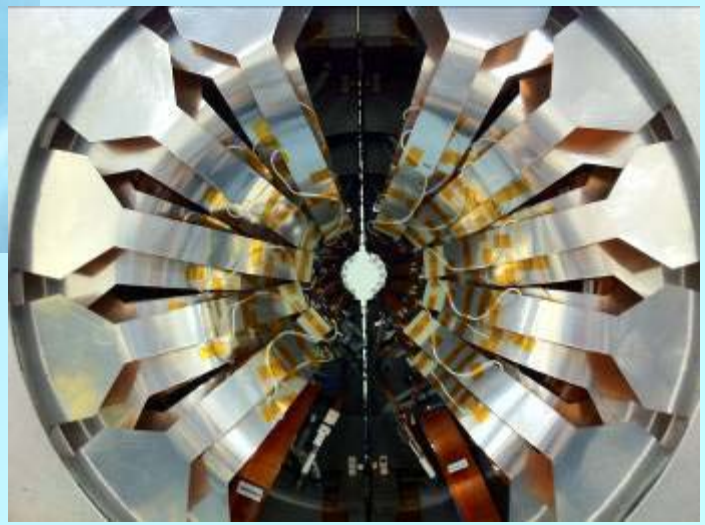
B. New Drive – cost and lead time Preferred, but can't be installed for start of shutdown.

Expect to have 40 ton Crane back in service by June 3?

Expect 10 ton crane to be back in service ASAP, ??

FVTX /VTX Assembly & Integration

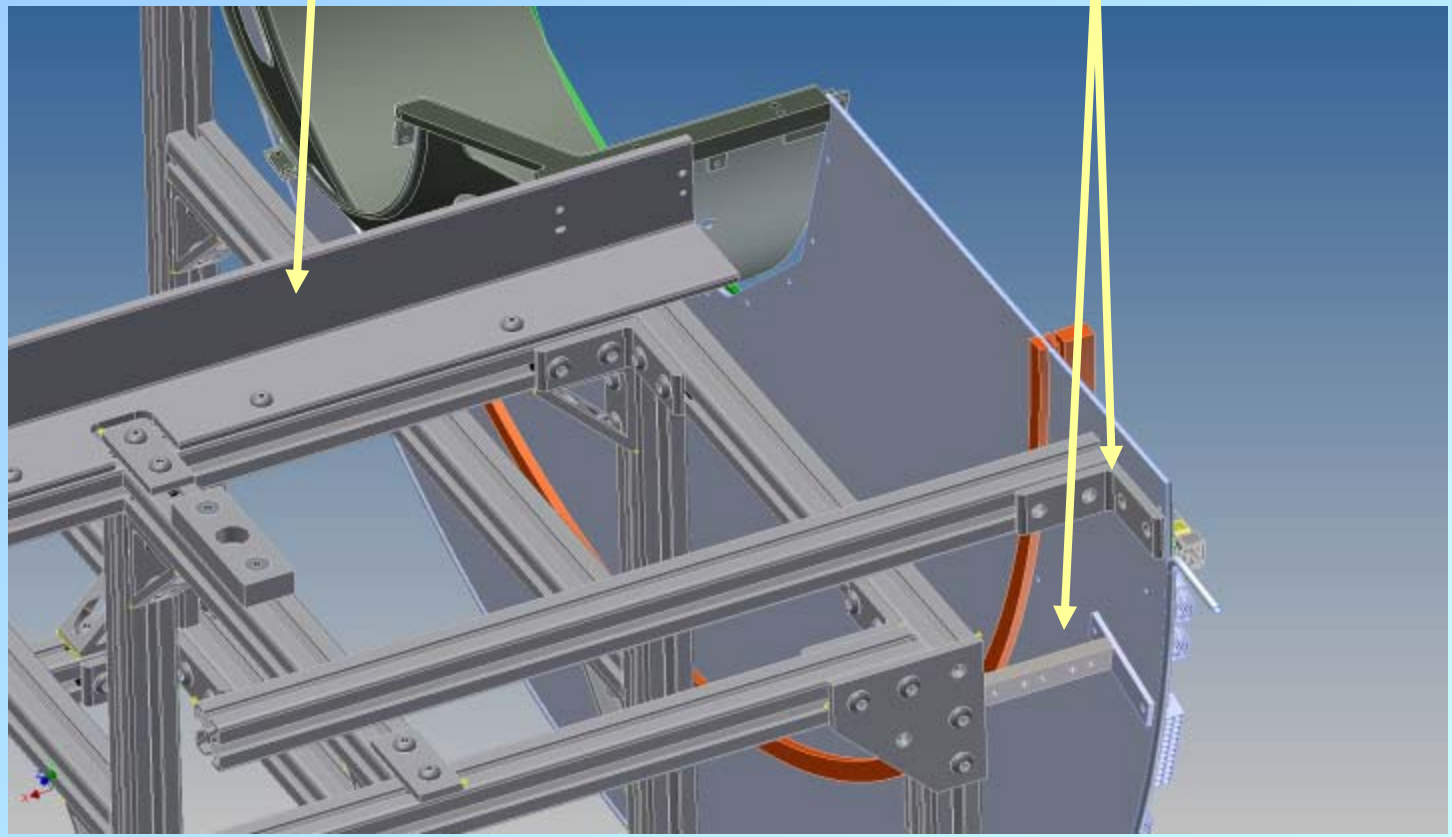




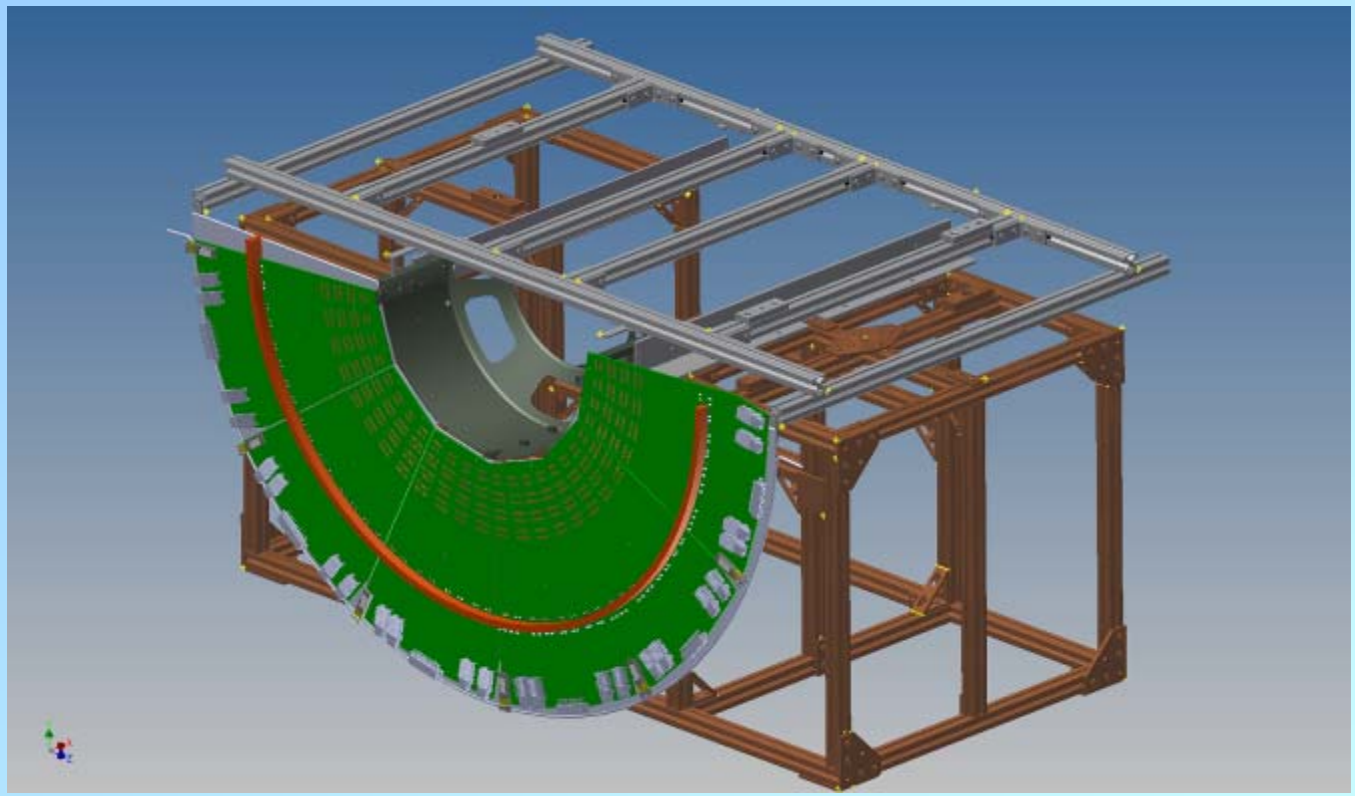
FVTX and VTX assembly areas currently in question. Scope of VTX repairs/improvements this summer is not yet clear.

Assembly fixture modifications at CS

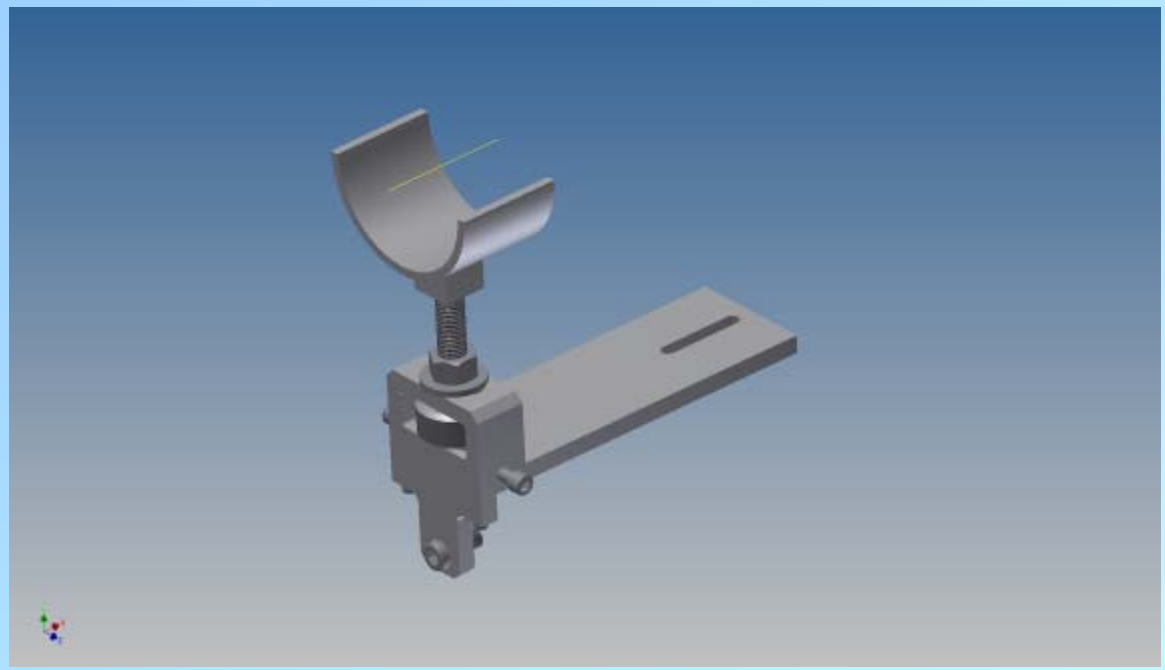
Bigwheel mounting brackets



FVTX Assembly transport fixture design



TECHNICAL SUPPORT 2011



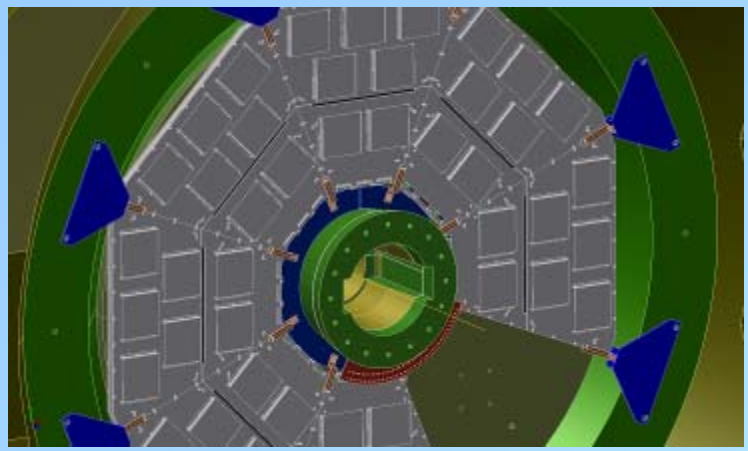
Improved Beampipe support for north station 1 support.

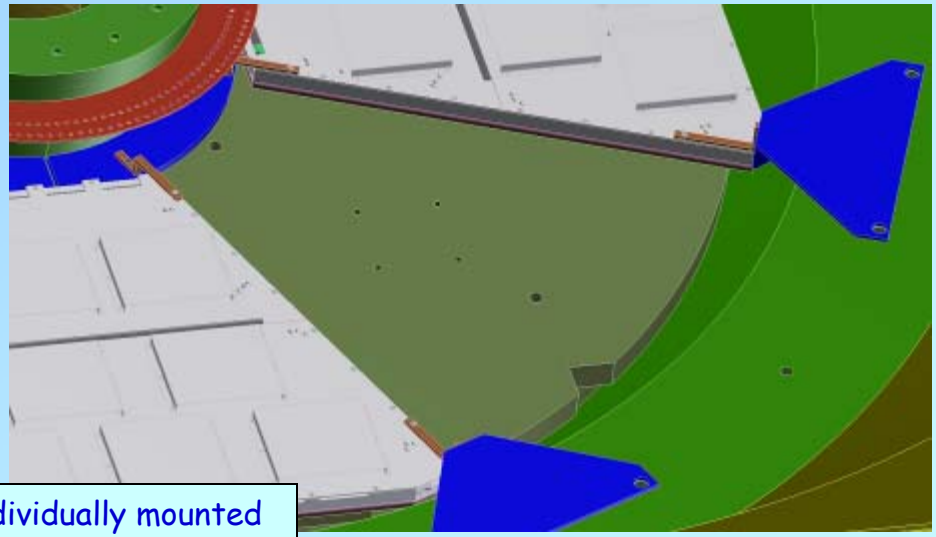
New wider rings have also been designed for south station 1 support. Both supports are intended to improve support when moving CM and MMS magnets during shutdown maintenance, based on experience last year and lessons learned as recorded during our 2010 shutdown closeout meeting.

Fabrication in progress at Central Shops

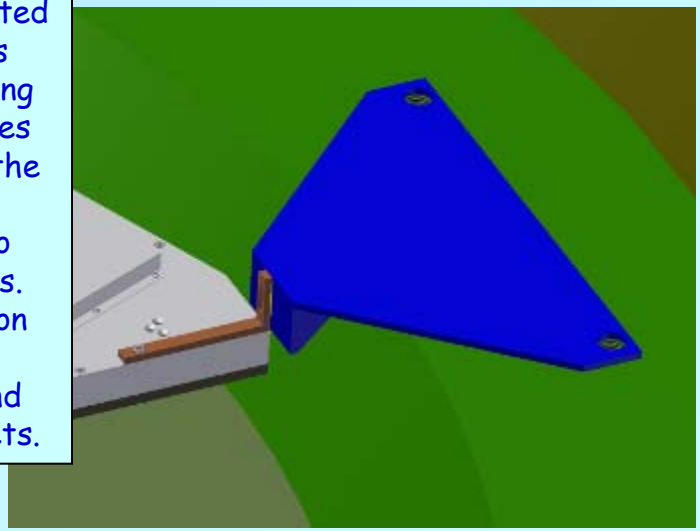
RPC1 Mounting Concept

(Preliminary)



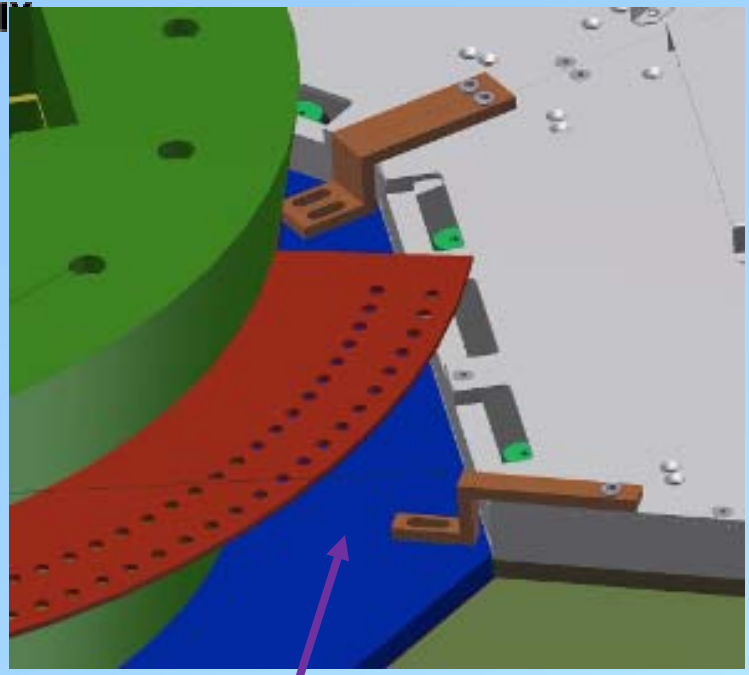


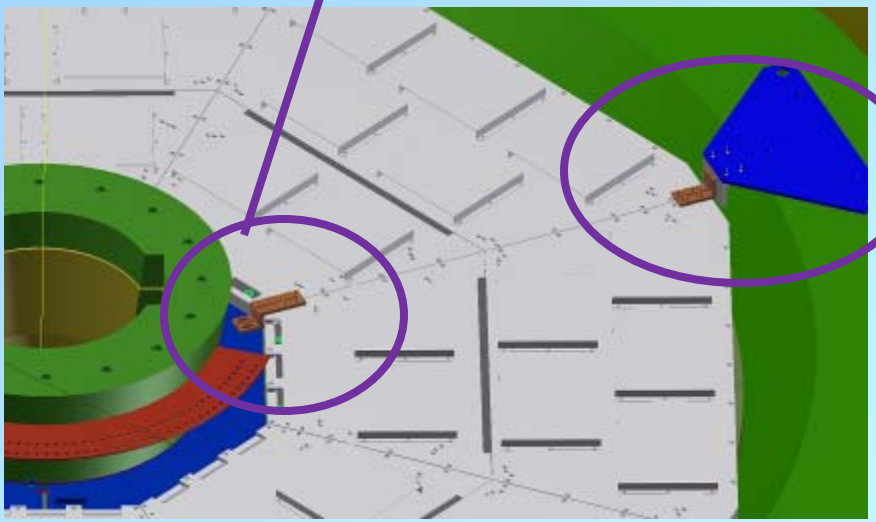
Octants are individually mounted then tied together and supported at the outer octant boundaries by brackets mounted on existing tapped holes, and on inner edges by rings which wedge against the flower pot lead liner. The absorber section is assumed to be pre-attached to the octants. Tapped thru holes in 6 places on each octant are used both to mount the absorber section and to attach the mounting brackets.

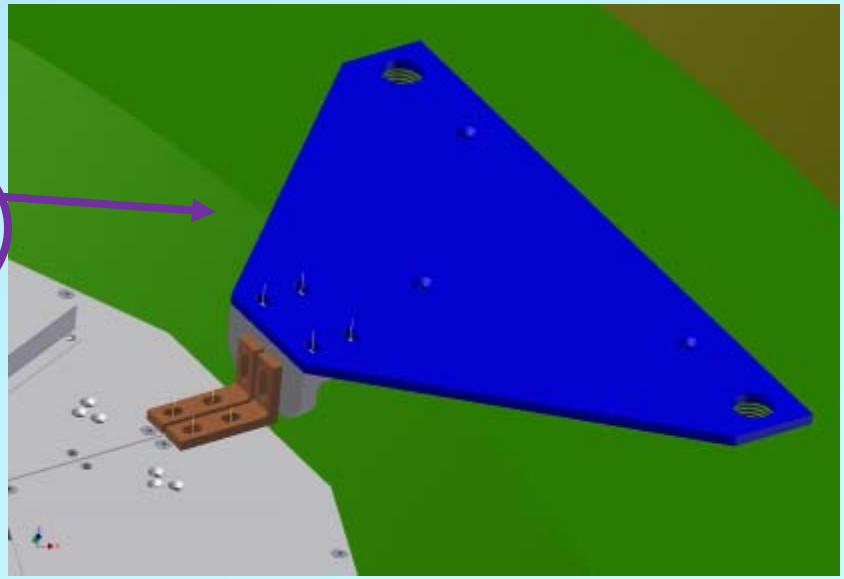


RPC1 Mounting Concept

Octants are individually mounted then tied together and supported at the outer octant boundaries by brackets mounted on existing tapped holes, and on inner edges by rings which wedge against the flower pot lead liner. Tapped holes in 8 places on each octant are used both to mount the absorber section and to attach the mounting brackets.







2010 Building Maintenance Issues

- Roof leaks in utility bathroom at northwest corner behind tech offices, over door between rack room and assembly hall, over door between control room and elect. ass'y room, southeast corner of IR and laser room.
- General maintenance for Trailer Offices (in progress)
  -Repair replace floor tiling as needed
- Flooding in AH/ Driveway heaving

PHENIX Procedure Review Current Status:

147 Procedures Identified

87 Made Inactive (not currently in use, will require revision to re- activate if and when necessary, available for reference purposes)

9 CAD procedures relevant to PHENIX, all are up to date and available on the CAD web site

43 PHENIX approved procedures.
all are current and up-to-date

9 Proposed/Draft Procedures (never previously formalized) (3 are ready for review) These will be addressed during next few months.

Web retrieval of latest procedures now available from PHENIX Internal:

http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_procedures.htm

Safety, Security, Etc.

1. EMS/OSH Registration audit will take place Today & Tomorrow.

Likely that auditors will visit PHENIX.

What you need to know:

All of our work is planned :

- *daily at the informal morning work planning meetings*
- *weekly at the Thursday weekly planning meeting*
- *With CAD at project level reviews and for tasks requiring enhanced work planning (green sheets)*

Planning means: (1) define the work, (2) identify hazards, (3) develop controls, (4) perform the work, (5) feedback

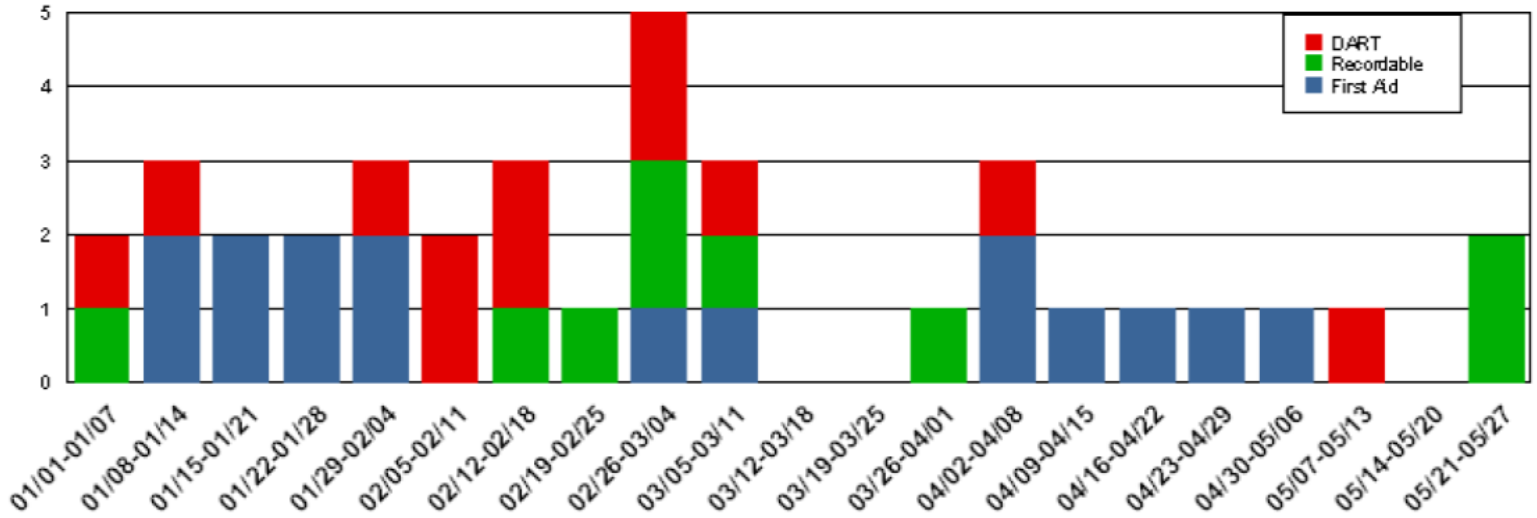
We have procedures for specific repeated tasks and we train to do our jobs correctly

Emergencies or spills call 344-2222 (or 911 from lab phone)

PHOENIX

TECHNICAL SUPPORT 2011

Injuries Per Week
As of 5/27/2011



Injury Status:

FY11 YTD: DART – 17, TRC – 31, First Aid – 28

FY10: DART – 17, TRC – 32, First Aid – 52

Recent Injuries		
5/26/11	Information only	A non-employee injured their head and reported to the clinic. After receiving first aid treatment, they returned to normal duties.
5/25/11	Non - Reportable (recently changed to DART)	A contractor injured their hand in a machine, was examined at the OMC and sent to an emergency room for x-rays. The contractor did not report for work the next day, making this recordable and a DART case. Investigation is pending.
5/24/11	Non - Reportable	An employee was pulling a heavy load and injured an arm. After receiving first aid at the OMC, an x-ray was taken and the worker was referred to an orthopedist. The latter prescribed medication which makes this a recordable injury.

Where To Find PHENIX Engineering Info

Official end of run now scheduled for June 29

Less than 4 weeks away!

Links for the weekly planning meeting slides, archives of past meeting slides,long term planning, pictures, videos and other technical info can be found on the PHENIX Engineering web site:

http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm